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The invention relates to a packing container, in particular for packing, transporting and to bearings and/or. Stacks of shoes, and a method to its preparation.

The shoe packing coming in the practice to the inset is consisting the two-piece shoe cardboard, of box and inverting cover. The disadvantage of this packaging consists above all of the fact that it concerns a one-way package, which must become either from the salesman or from the buyer of the shoes entsorgt. The disposal is connected with a substantial expenditure. Admits are already also re-usable packages for shoes, like z. B. stackable containers from plastic (WHERE 86/07576). Such containers are relatively expensive and cause a high transportation expenditure with the return motion as empties to the manufacturer of the shoes. In the practice therefore this packaging could not become generally accepted as re-usable package. Admits is also a re-usable package for shoes, which is designed as folding box (DE-OS 41 38 990). In order to become fair the higher Materialanforderungen placed against a re-usable package, this packaging consists of a multi-layer layer structure. In the range of the folding lines the layer structure exists a rigid insert, which can consist of cardboard, cardboard or plastic of an internal and outside flexible coating and outside of the folding lines is between the two coatings. The internal and outside coating can consist of paper, flexible film or textile flat plastic materials. At all outside edges of the one-piece cut solvable connecting elements are arranged. This packaging is very complex and thus expensive in its making. In addition this packaging before the use must be assembled and be divided after the use again. This is connected with a substantial work expended. The structure of the packing container is to be inserted in such a manner that only one face can be opened, over the packaged goods and/or. to infer. This variant is not regarded of sales mechanisms and the manufacturers of shoes as favourable. A further disadvantage of this packaging is their complex disposal after one no longer possible use. The packaging consists of different materials, which separately entsorgt to become to have. In addition the danger exists with re-usable packages that contamination arises and the packagings in certain time intervals must be cleaned. The above mentioned. Re-usable package is only conditionally suitable for it.

The invention was the basis the task, a packing container, in particular for shoes, consisting of a schachtelförmigen photograph container and a cover to create simple and economically producible is and as re-usable package is suitable and as empties only a small space requirement to be required, machine-operated washed can and is economically recycelfähig. Furthermore a economical preparing process is to be created.

According to invention the task is solved by the fact that the tray of the photograph container and the cover consist of a flächenförmigen or frame-like part of stable shockproof material, which consist side walls of a flexible fold upable material, whereby the upper edge of the side walls is connected with a frame-like reinforcing working part, and at least two each other opposite side walls at the frame-like part with the upper edge of the side walls is connected, is arranged tiltable supporting elements from stable rigid material, which are connectable positive with the frame-like part and the tray, in such a manner that the side walls become strained and are secured against lateral moving.

According to a favourable arrangement of the invention the side walls in soil direction exhibit supernatant edges, which are connected with the tray solid. In cover direction a side wall exhibits a supernatant edge, which is connected with the cover solid. With this variant the appropriate extensions of the side walls are connected with the base plate and the cover.

Another variant consists of the fact that the side walls are connected with a floor part from flexible material, and the floor part with the flächenförmigen or frame-like part solid forming the tray is connected. Also one of the side walls with one can cover-hurries from flexible material to be connected and cover-hurries is connected with the flächenförmigen or frame-like part solid forming the cover. Favourable way the side walls, the floor part consist and cover-hurry of a piece and of the same material. In such a way formed insert from synthetic textile material is prefabricated, whereby the cut hurry according to the form of the container are together-sewn or welded. The prefabricated insert is comparable in its form and design with an interior fodder.

For a rational production process it is favourable, if the flächenförmigen or frame-like parts consist, of plastic. They e.g. leave themselves, simply in the spraying casting process manufacture and can be connected by gluing or welding with the insert to a container. Preferring way consists the insert of a tear-solid plastic foil or a synthetic textile material. Is of great advantage for a later recycling of the packing container it, if only of a material consists all parts. For it the material polypropylene is particularly suitable. The side walls or the einstückige insert can be made of polypropylene fabric, whereby in case of the sewing of the cut hurry polypropylene threads are used. All remaining parts can be manufactured in the spraying casting process from polypropylenes. Such a packing container can be converted after the wear extremely economically to granular material, which can be used as secondary material again.

In accordance with a further arrangement variant the supporting elements than rod-shaped elements are trained and at the outside corner areas of the side walls arranged. The supporting elements can be trained also as flaps.

According to a further execution variant the cover can be connected with the photograph container or form photograph containers and covers two separate parts, whereby the cover is designed as inverting covers then. The connection between the photograph container and the cover can be made either by an extension of a side wall or via an additionally

attached hinge. So e.g. the frame-like part at the upper edge of the side walls can be connected with the frame-like part of the cover by a film hinge from polypropylenes. The supporting elements, which are arranged at the two short side walls preferably, are tiltable fastened either to an extension of the side walls or over a hinge with the frame-like part to the upper edge of the side walls connected. As hinge a film hinge from polypropylenes is particularly well suitable. The supporting elements are inward and outside tiltable. By swivelling the supporting elements outward and locking with the frame-like element of the tray and the frame-like part at the upper edge of the side walls, the side walls from the flexible material strained and the container attains necessary Steifigkeit. Die diagonals of the side walls to work thereby as tension members and a moving of the container between the upper and the lower framework construction unit is thus no longer possible. If the packing container is to be transported or stored as empties, then the supporting elements are to be unlocked and folded inward. The flexible side walls fold likewise inward and the frame-like part at the upper edge: the side walls arrives thereby in tangential contact with the framework of the tray. The cover will closed and can with the lower frame part of the tray rest. The height of the cover can be so limited that the lower framework of the soil is taken up in the cover completely or only partly. After folding up the packing container its height is reduced to approx.

115.Dadurch can be kept and transported it as empties very space-saving.

A particularly favourable and economical preparation of the packing container according to invention is possible as follows.

First the internal insert from textilem polypropylene material is manufactured, e.g. by sewing or welding of the appropriate cut. The einstückige insert, consisting of floor part, side walls, cover-hurry and with one at the inside fastened span for separate hitting of left and right shoe when packing, on a form core of a spraying casting tool one stretches if necessary. The prefabricated stretched insert corresponds already to the form of the packing container which can be formed. As spraying casting tool preferably a Heisskanalwerkzeug comes to employment after the closing of the tool the flächenförmigen or frame-like parts and the supporting elements by spraying of a thermoplastic plastic material on the appropriate surfaces of the textilem fabric over one or more moulding on places in an injection moulding cycle is formed, whereby from superficial melting on of the textilem plastic material and penetration of the melt of the spraying casting material into the pores of the textilem plastic material a solid connection results. After the cooling procedure the packing container in actually well-known is released from form way.

It is also possible to manufacture the initially described variant, with which the packing container not with an internal insert is equipped, after this method. In this case the insert consists only of the four connected side walls with supernatant edges, to which the appropriate parts are moulded on. The photograph container and the cover can be manufactured as separate parts also in separate spraying casting tools. Preferring way should the insert and/or. the side walls from polypropylene fabric exist to be used and as spraying casting mass polypropylene.

According to the high need at such packing containers thus a economical preparation is possible. The packing container becomes as re-usable package the requirements posed fills fairly and can for approx. 20 to 30 circulations to be used. In case of arising contamination at the fabric, the packing container can problem-free washed and/or. are cleaned. Under a complete recycling of the entire packing container this is particularly pollution free. The packing container according to invention is not only limited for shoes in its use. It can be manufactured in different sizes and also to packing, supports and transport of other subject-matters and/or. Materials to be used. The packing container is stackable and under the side walls from textilem material also breathe active. For certain applications it can be appropriate, if at the packing container or two handles are still attached.

The invention is to be described below by the example of a packing container of shoes. In the associated design show

Fig. 1 the prefabricated insert in perspective display in the strained condition,

Fig. 2 a packing container for shoes in opened unfold condition in perspective display,

Fig. 3 a cutout of a profile of the packing container in increased ruler with engaged flap,

Fig. 4 the packing container in accordance with Fig. 2 in folded up condition in perspective display and

Fig. 5 a cutout from the profile of the packing container in folded up condition,

In the figure 1 an insert 1 from flexible material, is represented to a polypropylene fabric. The insert 1 consists of a piece and has a floor part 2, four side walls 3 and one cover-hurries 4. According to the cut the individual parts with polypropylene threads are together-sewn. The two short side walls are provided with extensions 14, to which the Seitenklappen are fastened. The vorgefertigte insert 1 is due to the unstable, flexible side walls 3 in the delivered state a flat thing.

In the figure 2 the complete finished packing container is represented. The floor part 2 of the insert 1 is thereby solid connected with a lower framework 5. The lower framework 5 possesses a cross-like structure with an angular edge 6 at the two long sides. The insides of the longitudinal folds 6 are connected with the fabric material of the insert 1 likewise solid. The four side walls 3 of the packing container consist of the flexible polypropylene fabric. At the upper edge of the side walls a circulating narrow framework 7 is fastened, which prefer-proves like the lower framework of polypropylenes consists. To cover-hurry 4 of the insert 1 is fastened a cross-like trained framework 8, in order to lend to the cover necessary stability. The framework 8 possesses a circulating right-angled edge 15, which encloses the upper framework 7 after the closing of the cover 9. The cover 9 is therefore designed as inverting covers. The tray 13 of the packing container becomes as in Fig. 2 shown by the floor part 2 and the lower framework 5 with the two edges 6 in an educated manner, whereby the floor part 2 represents the inside. The framework 5 is from downside connected with the floor part with its contact surfaces. The structure from cover-hurry 4 and the framework 8 of existing cover is analog. During the storage and transport the two frameworks 5, 8 form the upper and lower delimitation and take up any shock loadings. In the pile group thus also an easy removal of a packing container is possible.

In the example shown the cover is 9 over cover-hurries 4 of the insert 1 connected with the photograph container 10. A narrow strip 11 of covering ILS 4 forms thereby the hinge. At the two short sides of the photograph container 10 tiltable flaps 12 are arranged. The flaps 12 are fastened to an extension 14 of the two side walls from textilem material, similarly as the fixing of the framework 8 described before to cover-hurry 4 in each case. A narrow strip of the two side parts from the polypropylene fabric forms thereby the Scharnier. Um the desired stability and rigidity of the photograph container 10 to reach, the two flaps 12, which consist polypropylenes of a stable material, preferably, outward swivelled to it at the framework 7 and at the framework 5 engage.

In the Fig. 2 is represented the right flap 12 in opened condition and the left flap 12 in engaged condition. The latter is in

Fig. 3 shown in increased display. At the extension 14 of the side wall a smaller bending points 3 fastened flap 12 likewise on and at the upper side in cover height a bending at the lower side. Upper bending is introduced to at the framework 7 planned Hinterschnidung 16 and the lower part the flap is engaged over at the framework 5 an attached diagonally running nose 17. Thus the flexible side walls become strained and the upper and lower framework 5, 7 are secured against a lateral moving. After engaging the two flaps 12 the photograph container 10 achieved its full stability. The entire packing container exhibits an optically pleasant appearance in the internal insert 1 from the synthetic textile material. For packing the shoes still another span can be fastened to the inside of the insert, in order to separate right shoe from the left shoe to. The insert and the frameworks can be colored or of different color arranged. The packing container is pilable and at the exteriors of the flaps 12 can the appropriate marking references for the shoes be attached. In the figures the packing container is represented 4 and 5 in the folded condition. The lower framework 5, 6 of the soil 13 partly in the cover 9 is taken up. For folding up the packing container the two Seitenklappen 12 are unlocked and folded in the opened condition of the container inward. Afterwards the flexible side walls 3 put inward and the upper framework 7 rest upon on the edge 6 of the lower framework 5 when folding up. The cover 9 closed becomes subsequently, whereby this can rest with the lower framework 5. The packing container has then, as in Fig. 4 shown, only a small height and can do as empties space-saving kept and/or. are transported. The packing container can be manufactured economically. It, if all elements consist same material, a thermoplastic plastic of that, is favourable like e.g. Polypropylen. Da the entire internal surface of the packing container from textile material fabric exists, is damages to the Schuhoberfläche when packing and during transport impossible.

For the preparation of the packing container there are different possibilities. The stable rigid parts such as frameworks and flaps are manufactured in the spraying casting process from thermoplastic plastic as single components and manufactured afterwards with the prefabricated insert by welding or gluing. Another variant consists of the fact that the stable parts in the spraying casting process are moulded on direct by means of a Heisskanalwerkzeuges to the insert.

A simplified variant of the packing container in the context of the invention e.g. is, the following. The tray and the cover are formed exclusively by one plastic sheet each, which can be provided with reinforcements and break-throughs. The side walls consist of flexible textile material, whose upper edge with reinforcing a working framework and their lower extension are connected with the tray solid. At the short sides of the framework hinges for the tiltable flaps are fastened, which rest with the tray. The cover can be connected by a hinge with the photograph container or be trained as separate inverting covers.

Also regarding the materials for the individual parts different possibilities are offered, whereby under present conditions plastic is best suitable. There the packing container from a material, like e.g. Polypropylene to be manufactured knows, is possible after the wear of the packing container a economical recycling of the plastic material.